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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/132,036 10/05/93 SERA

N MAT2670

EXAMINER

FIGLIN, C

ART UNIT

PAPER NUMBER

9

E1M1/0112

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2103

DATE MAILED:

01/12/95

This is a communication from the examiner in charge of your application.  
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☒ Responsive to communication filed on 11/30/94 ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), — days from the date of this letter.  
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- |   |  |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice of Draftsman's Patent Drawing Review, PTO-948. |
| 3. <input type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449.                 | 4. <input type="checkbox"/> Notice of Informal Patent Application, PTO-152.                  |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474.     | 6. <input type="checkbox"/>  |

Part II SUMMARY OF ACTION

1. ☐ Claims 1-9, 14-26, 29 are pending in the application.  
Of the above, claims 18-26, 29 are withdrawn from consideration.
2. ☐ Claims \_\_\_\_\_ have been cancelled.
3. ☐ Claims \_\_\_\_\_ are allowed.
4. ☒ Claims 1-9, 14, 16, 17 are rejected.
5. ☒ Claims 15 are objected to.
6. ☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.
7. ☐ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on \_\_\_\_\_. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable; ☐ not acceptable (see explanation or Notice of Draftsman's Patent Drawing Review, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on \_\_\_\_\_, has (have) been ☐ approved by the examiner; ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed \_\_\_\_\_, has been ☐ approved; ☐ disapproved (see explanation).
12. ☒ Acknowledgement is made of the claim for priority under 35 U.S.C. 119. The certified copy has ☒ been received ☐ not been received  
☐ been filed in parent application, serial no. \_\_\_\_\_; filed on \_\_\_\_\_.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

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*Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. § 119, which papers have been placed of record in the file.

*Claim Rejections - 35 USC § 112*

Claims 3, 4 and 17 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 is unclear as to structure of the invention and further there is no antecedent basis for "the bent area". Claim 4 is unclear as to where and what the bent area is structurally. Claim 17 is unclear structurally because the second insulating layer is not also claimed to be on the second printed conductive circuit layer. Claims 3 and 17 will not be evaluated from the standpoint of prior art at this time because they are too indefinite to assess the full meaning.

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1 and 2 are rejected under 35 U.S.C. § 103 as being unpatentable over Bengston et al., in view of Fetty. Bengston et al. discloses a base insulating layer (10) having at least two metallic layers (12,16) and having another insulating layer (22) to cover the metal layers that leaves openings for the metallic layers to form lands. Bengston et al., does not specifically disclose a copper laminated polyimide board being connected to the lands. However, it is inherent that one can connect anything to the lands, and copper laminated polyimide are old and well known in the art as illustrated by Fetty (See Col. 6)

Claim 4 and 5 are rejected under 35 U.S.C. § 103 as being unpatentable over Bengston et al., in view of Matsumoto. Bengston et al. discloses a base insulating layer (10) having at least two metallic layers (12,16) and having another insulating layer (22) leaving openings for the metallic layers to form lands. Bengston does not disclose a bend in the board. However, Matsumoto does disclose a bend in a printed circuit board (10),

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and a reinforcement plate (13). It is inherent that a plate can be made of solderable material, if the plate is made of metal. Further, absolutely no criticality whatsoever has been established regarding the claimed material being solderable, and therefore it is deemed to be purely a matter of design.

Claims 6, 7, 9, 14, and 16 are rejected under 35 U.S.C. § 103 as being unpatentable over Bengston et al. Bengston et al., discloses a base insulating layer (10) having at least two metallic layers (12,16) and having another insulating layer (22) to cover the metal layers that leaves openings for the metallic layers to form lands. Bengston et al., does not disclose the various layers of insulating and conducting material added to this basic structure. However, it would be obvious to take the basic structure of Bengston et al., and add any combination of insulating and conducting layers as needed, and it would simply be a matter of design.

Claim 8 is rejected under 35 U.S.C. § 103 as being unpatentable over Bengston et al., in view of Kawakami et al. Bengston et al., discloses a base insulating layer (10) having at least two metallic layers (12,16) and having another insulating layer (22) to cover the metal layers that leaves openings for the metallic layers to form lands. Bengston et al., does not

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disclose the top layer being a conductive shielding. However Kawakami et al., disclose that it is known in the art to have make the top layer of a circuit board (5) a conductive shielding. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the structure of Bengston et al., with the teachings of Kawakami et al., in order to provide shielding protection for the board.

Examiner also notes Feger et al., for it's well known structure of having metallic layers partially covered by insulation to form metallic lands.

*Allowable Subject Matter*

Claim 15 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to C. Figlin whose telephone number is (703) 308-3076.

A handwritten signature in cursive script, appearing to read "Leo P. Picard".

LEO P. PICARD  
SUPERVISORY PATENT EXAMINER  
ART UNIT 213

C. Figlin  
January 8, 1995